

**THIN FILM CAPACITOR, ITS MANUFACTURE AND WORKING METHOD OF ELECTRODE**

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**Abstract of JP10163447**

**PROBLEM TO BE SOLVED:** To realize a thin film capacitor wherein leak current density is small, by forming a first electrode layer which is in contact with at least a high permittivity film of an upper electrode film and has a specified thickness, of ruthenium or ruthenium oxide. **SOLUTION:** In a thin film capacitor, BST is used as a high permittivity film 2, and a silicon (Si) substrate 5 has a surface which is SiO<sub>2</sub> 4 formed by heat treatment, on which substrate 5 the following are formed; Pt as a lower electrode 3, a high permittivity film 2, and single layer Ru as upper electrodes which are 30nm in thickness. An upper electrode film 1 is composed a single layer or a plurality of layers. The first electrode layer which is in contact with at least the high permittivity film 2 is composed of ruthenium(Ru) or ruthenium oxide (RUO<sub>2</sub> ). It is especially important that the thickness of the layer is less than 50nm and greater than or equal to 5nm. Thereby a thin film capacitor excellent in electric characteristics can be realized.

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